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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/575,546	04/10/2006	Oleg Jurievich Abramov	111150021US	8960

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PROCOPIO, CORY, HARGREAVES & SAVITCH LLP  
530 B STREET  
SUITE 2100  
SAN DIEGO, CA 92101

EXAMINER
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NGUYEN, TUAN HOANG

ART UNIT	PAPER NUMBER
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2618

NOTIFICATION DATE	DELIVERY MODE
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09/16/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/575,546	<b>Applicant(s)</b> ABRAMOV ET AL.	
	<b>Examiner</b> TUAN H. NGUYEN	<b>Art Unit</b> 2618	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 April 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 23-47 is/are pending in the application.
- 4a) Of the above claim(s) 1-22 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 34-47 is/are allowed.
- 6) ☒ Claim(s) 23,25,26,32 and 33 is/are rejected.
- 7) ☒ Claim(s) 24 and 27-31 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

This is a response to the Applicant's filing on 12/13/2006. In virtue of this filing, claims 1-15 are currently presented in the instant application.

#### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

#### ***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on 07/13/2006 has been considered by Examiner and made of record in the application file.
3. Claims 1-22 cancelled.

#### ***Drawings***

4. The drawing submitted on 04/10/2006 has been considered by Examiner and made of record in the application file.

#### ***Claim Rejections - 35 USC § 112***

5. Claims 23-33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Consider claim 23, the limitation "... **if the current value of communication quality is greater than a maximum threshold value** of communication quality, then continuing reception of information and transmission of information; and **if the current value of communication quality is less than a minimum threshold value** of communication quality, then interrupting reception of information and transmission of information and starting a procedure for the optimization of the antenna pattern." renders the claim indefinite because the claim fails to clearly define what is the condition "... if the current value of communication quality is **NOT greater** (less) than a maximum threshold value ..."; and "if the current value of communication quality is **NOT less** (greater) than a minimum threshold value...".

Claims 24, 25, 27 and 32 depend on claim 23. Therefore they rejected under 35 U.S.C. 112, second paragraph, as the same manner.

Claim 26 depends on claim 25. Therefore it rejected under 35 U.S.C. 112, second paragraph, as the same manner.

Claims 28-30 depend on claim 27. Therefore they rejected under 35 U.S.C. 112, second paragraph, as the same manner.

Claim 31 depends on claim 30. Therefore it rejected under 35 U.S.C. 112, second paragraph, as the same manner.

Claim 33 depends on claim 32. Therefore it rejected under 35 U.S.C. 112, second paragraph, as the same manner.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 23, 25 and 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hovers et al. (US PAT. 7,289,826 hereinafter, "Hovers") in view of Wang et al. (U.S PAT. 6,580,394 hereinafter, "Wang").

Consider claim 23, Hovers teaches a method of operating a wireless transceiver having an antenna, the antenna having more than one antenna pattern, the method comprising: determining a current value of communication quality for a transceiver based on a received signal (figure 1, col. 7 lines 39-51); if the current value of communication quality is greater than a maximum threshold value of communication

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quality, then continuing reception of information and transmission of information (figure 12 col. 4 lines 40-55 and col. 30 lines 36-52).

Hovers does not explicitly show that if the current value of communication quality is less than a minimum threshold value of communication quality, then interrupting reception of information and transmission of information and starting a procedure for the optimization of the antenna pattern.

In the same field of endeavor, Wang teaches if the current value of communication quality is less than a minimum threshold value of communication quality, then interrupting reception of information and transmission of information and starting a procedure for the optimization of the antenna pattern (col. 10 lines 22-48).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use, if the current value of communication quality is less than a minimum threshold value of communication quality, then interrupting reception of information and transmission of information and starting a procedure for the optimization of the antenna pattern, as taught by Wang, in order to provide determining whether to employ an antenna array beamforming technique based on a comparison of the determined difference to the predetermined difference threshold.

Consider claim 25, Hovers further teaches the procedure for the optimization of the antenna pattern includes: changing the antenna pattern at least one time (col. 2 line 64 through col.3 lin 6 and col. 7 lines 52-61; determining a communication quality value at each at least one changing of the antenna pattern (col. 7 lines 52-67); determining a

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highest communication quality value among communication quality values determined at each at least one changing of the antenna pattern (col. 7 lines 52-67); and setting the current value of communication quality equal to the highest communication quality value (col. 30 lines 4-8).

Consider claim 32, Hovers further teaches the current value of communication quality is determined using at least one parameter included in the received signal (col. 7 lines 17-38).

Consider claim 33, Hovers further teaches tile at least one parameter includes at least one of a measurement of a level of the received signal, a measurement of a ratio of a level of the received signal to a level of noise, a measurement of a ratio of a level of the received signal to a level of interference, and a measurement of an error ratio (col. 44 lines 43-63).

8. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hovers in view of Wang and further in view of Thomas David (European Patent Application EP 1 069 706 hereinafter, "Thomas").

Consider claim 26, Hovers and Wang in combination, fails to teach changing the antenna pattern includes at least one of changing an azimuth bearing, changing an elevation angle, and switching-over a directivity pattern.

However, Thomas teaches changing the antenna pattern includes at least one of changing an azimuth bearing, changing an elevation angle, and switching-over a directivity pattern (page 10 [0041]).

Therefore, it is obvious to one of ordinary skill in the art at the time the invention was made to incorporate the disclosing of Thomas into view of Hovers and Wang, in order to increase the user capacity of a cellular system.

### ***Allowable Subject Matter***

9. Claims 24 and 27-31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Reasons for Allowance***

10. Claims 34-47 are allowed over the prior art record.

11. The following is an examiner's statement of reasons for allowance:

Hovers et al. (U.S. Patent No. 7,289,826) teaches a method of operating a wireless transceiver having an antenna, the antenna having more than one antenna pattern, the method comprising: determining a current value of communication quality for a transceiver based on a received signal (figure 1, col. 7 lines 39-51); if the current value of communication quality is greater than a maximum threshold value of



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communication quality, then continuing reception of information and transmission of information (figure 12 col. 4 lines 40-55 and col. 30 lines 36-52).

Gardner et al. teaches a method of operating a wireless transceiver having an antenna, the antenna having more than one antenna pattern, the method comprising: determining a current value of communication quality for a transceiver based on a received signal (figure 5, page 3, paragraph [0041]); if the current value of communication quality is greater than a maximum threshold value of communication quality, then continuing reception of information and transmission of information (figure 11 page 5, paragraph [0054]).

Consider claims 34-47, the prior art made of record, alone or in combination, fails to clearly teach or fairly suggest if the current value of communication quality is less than a minimum threshold value of communication quality, then starting a procedure for the optimization of antenna beam direction; and if the current value of communication quality is greater than the minimum threshold value of communication quality and less than the maximum threshold value of communication quality, then starting the procedure for the optimization of antenna beam direction at the expiration of a pre-assigned time interval since completion of a previous performance of the procedure for the optimization of antenna beam direction, as specified in the independent claims 34 and 41, and further limitations of their respective dependent claims 35-40 and 42-47.

### ***Conclusion***

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12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In order to expedite the prosecution of this application, the applicants are also requested to consider the following references. They are not applied into this Office Action; they are also called to Applicants attention. They may be used in future Office Action(s).

Ishii (U.S. Patent No. 6,628,639) disclosed wireless network using high and low decision thresholds for selecting and maintaining a channel.

Shi et al. (U.S. Patent No. 6,360,088) disclosed antenna diversity switching system and method for selecting an antenna through a programmed evaluation.

Segura et al. (U.S. Patent No. 6,961,594) discloses method of broadcasting a quality over-the-air multicast.

13. Any response to this action should be mailed to:

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(571) 273-8300

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan H. Nguyen whose telephone number is (571) 272-8329. The examiner can normally be reached on 8:00Am - 5:00Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Maung Nay A. can be reached on (571) 272-7882. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Tuan H. Nguyen/  
Examiner  
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